

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

Claims 1-21. (canceled).

22. (previously presented): A method for making a dry plating built-up, comprising the steps of:

providing silicon carbide as a starting source, and subjecting the silicon carbide to dry plating while changing a concentration of a reactive gas continuously or intermittently, thereby depositing and forming, on a substrate, a thin film having different refractive indices which changes in a wave form selected from a triangular wave and sine wave in the thickness direction thereof.

23.-25. (canceled).

26. (currently amended): ~~A method according to claim 24,~~ A method for controlling a refractive index of dry plating film which comprises the steps of:

providing silicon carbide as a starting source consisting essentially of a silicon carbide sintered product which is obtained by sintering a homogeneous mixture having a density of 2.9g/cm<sup>3</sup> or over and made of silicon carbide powder and a non-metallic sintering aid; and

subjecting the silicon carbide to dry plating while controlling a concentration of a reactive gas including a nitrogen-containing gas thereby forming a thin film, on the substrate, made primarily of silicon carbide and having a refractive index ranging from 1.4 to 2.8, wherein the thin film formed on the substrate, made primarily of silicon carbide, comprises  $\text{SiC}_x\text{N}_y$ , wherein  $x > 0$  and  $y > 0$ , and

wherein the refractive indices of said thin film changes in a rectangular wave form in the thickness direction thereof.

27. (currently amended): ~~A method according to claim 24,~~ A method for controlling a refractive index of dry plating film which comprises the steps of:

providing silicon carbide as a starting source consisting essentially of a silicon carbide sintered product which is obtained by sintering a homogeneous mixture having a density of  $2.9\text{g/cm}^3$  or over and made of silicon carbide powder and a non-metallic sintering aid; and

subjecting the silicon carbide to dry plating while controlling a concentration of a reactive gas including a nitrogen-containing gas thereby forming a thin film, on the substrate, made primarily of silicon carbide and having a refractive index ranging from 1.4 to 2.8,

wherein the thin film formed on the substrate, made primarily of silicon carbide, comprises  $\text{SiC}_x\text{N}_y$ , wherein  $x > 0$  and  $y > 0$ , and

wherein the refractive indices of said thin film changes in a triangular wave form in the thickness direction thereof.

28. (currently amended): ~~A method according to claim 24,~~ A method for controlling a refractive index of dry plating film which comprises the steps of:  
providing silicon carbide as a starting source consisting essentially of a silicon carbide sintered product which is obtained by sintering a homogeneous mixture having a density of 2.9g/cm<sup>3</sup> or over and made of silicon carbide powder and a non-metallic sintering aid; and  
subjecting the silicon carbide to dry plating while controlling a concentration of a reactive gas including a nitrogen-containing gas thereby forming a thin film, on the substrate, made primarily of silicon carbide and having a refractive index ranging from 1.4 to 2.8,  
wherein the thin film formed on the substrate, made primarily of silicon carbide, comprises SiC<sub>x</sub>N<sub>y</sub>, wherein x > 0 and y > 0, and  
wherein the refractive indices of said thin film changes in a sine wave form in the thickness direction thereof.